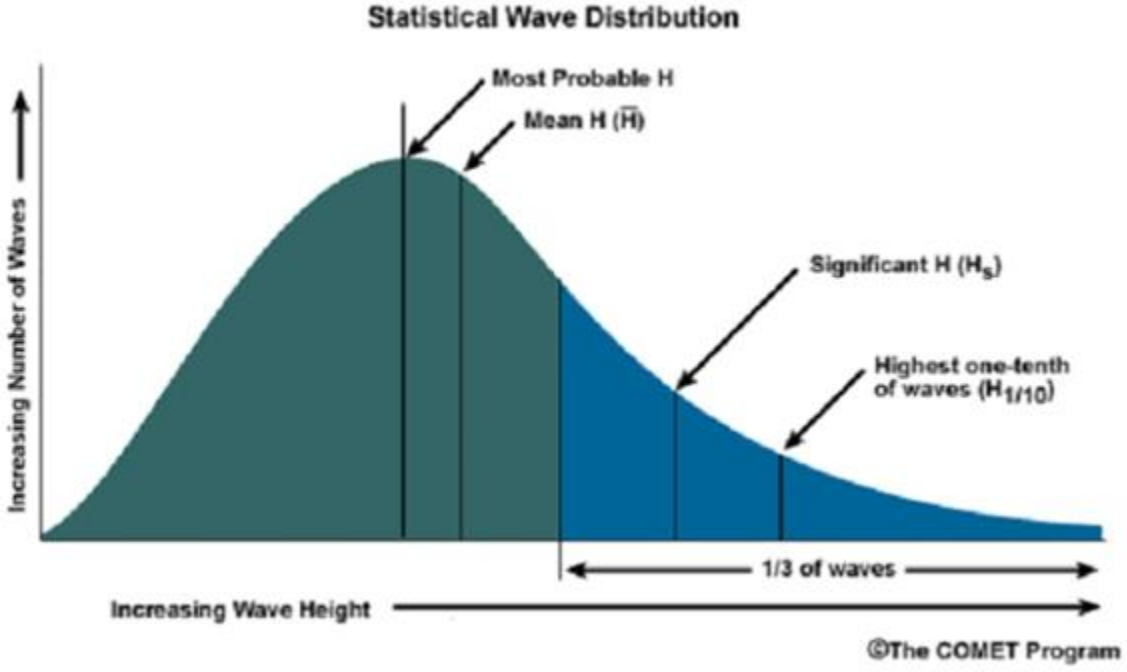
Rayleigh Wave Distribution Enhancement Request for Comments

The National Weather Service (NWS) is seeking user comments on its Experimental Enhanced Coastal Waters Forecast Using Rayleigh Distribution for Wave Heights through September 30, 2015. The NWS Weather Forecast Offices (WFO)s in Southern Region, currently WFOs Miami and Tallahassee, are testing an experimental enhancement to their Coastal Waters Forecast (CWF), additional wave height fields using the theoretical Rayleigh Distribution.

NWS can infer several different wave statistics from this Distribution such as the Significant Wave Height (Hs) and the average height of the highest 10 percent of waves (H1/10) observed at sea, approximately 1.272 times the significant wave height.



The current CWF product provides a forecast range of the expected Hs across the coastal waters. Hs is defined as the average height of the highest 1/3 of the waves. For example:

TONIGHT...NORTHWEST WINDS 13 TO 18 KNOTS BECOMING NORTHEAST 16 TO 21 KNOTS. SEAS 2 TO 4 FEET BUILDING TO 4 TO 6 FEET LATE. DOMINANT PERIOD 6 SECONDS. INTRACOASTAL WATERS CHOPPY IN EXPOSED AREAS. SLIGHT CHANCE OF SHOWERS.

Adding the H1/10 wave height to the CWF product will provide a

more descriptive and accurate assessment of the wave field expected for any particular time across a given marine zone. User knowledge of this information could reduce the number of marine accidents at sea, saving lives. This new information will follow this template:

Hs with occasional H1/10 SEAS POSSIBLE.

For example:

.TONIGHT...NORTHWEST WINDS 13 TO 18 KNOTS BECOMING NORTHEAST 16 TO 21 KNOTS. SEAS 2 TO 4 FEET WITH OCCASIONAL 5 FEET BUILDING TO 4 TO 6 FEET WITH OCCASIONAL 8 FEET POSSIBLE LATE. DOMINANT PERIOD 6 SECONDS. INTRACOASTAL WATERS CHOPPY IN EXPOSED AREAS. SLIGHT CHANCE OF SHOWERS.

These additions will be made available as part of the routine forecast provided online at

http://www.srh.noaa.gov/mfl

http://www.srh.noaa.gov/lix

http://www.srh.noaa.gov/crp

http://www.srh.noaa.gov/hgx

http://www.srh.noaa.gov/bro

http://www.srh.noaa.gov/tae

http://www.srh.noaa.gov/sju

http://www.srh.noaa.gov/jax

and broadcast over NOAA Weather Radio All Hazards. This information will not be provided through the point and click format.

Comments regarding this enhancement to the CWF can be provided at:

www.nws.noaa.gov/survey/nws-survey.php?code=SRERD

NWS is seeking comments through September 30, 2015. During this comment period, a proactive effort will be made to educate users and partners of the product availability and use. At the end of the comment period, NWS will decide whether to make Southern Region's Enhanced CWF an operational product. Other NWS Southern Region WFOs may join this test. Further Public Information Statements will be issued as needed.

For more information please contact:

Dr Pablo Santos
Meteorologist in Charge
NWS Miami, FL 33165-2149
pablo.santos@noaa.gov

National Public Information Statements are online at:

http://www.weather.gov/os/notif.htm

For more information on the Rayleigh distribution, please refer to the article written by Robbie Berg and Jamie Rhome of the National Hurricane Center at http://www.vos.noaa.gov/MWL/aug_05/nws.shtml